

Abstract:

The invention relates to separators for lithium batteries and to a process for producing them, and also to their use.

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The separators of the invention for lithium batteries, based on a sheetlike flexible substrate provided with a plurality of openings and having a porous inorganic electrically insulating coating on and in said substrate, said coating closing the openings in the substrate, the material of the substrate being selected from woven or non-woven electrically nonconductive polymeric
10 fibers and the inorganic electrically conductive coating comprising metal oxide particles, are notable for the fact that the separators have lithium ion conducting properties without the presence of an electrolyte. After filling them with an additional lithium ion conducting electrolyte, the resulting ion conduction is much higher than in the case of conventional combinations of non-lithium ion conducting separators and electrolyte.

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The separators of the invention are especially suitable for use in high power lithium batteries.